

# MAXIMUM ATRIAL TRACKING RATE FOR CARDIAC RHYTHM MANAGEMENT SYSTEM

## Abstract

A cardiac rhythm management system includes an operational mode in which ventricular pacing pulses are delivered at a rate that tracks a sinoatrial rate up to an appropriate maximum atrial tracking rate (MATR) value determined by the system. In one example, the MATR value is based on a patient activity level and a hemodynamic maximum rate (HMR) determined from a QRS-to-S<sub>2</sub> interval, where S<sub>2</sub> is an accelerometer-generated fiducial correlative to aortic valve closure (AVC). In a further example, a correlation between the QRS-to-S<sub>2</sub> interval and heart rate is established, and the MATR is based on the patient activity level and heart rate. In a further example, a lower rate threshold for providing antitachyarrhythmia therapy is modified based on the MATR. For example, when the MATR exceeds a default value of the antitachyarrhythmia therapy lower rate threshold, the threshold tracks the MATR. In another example, the MATR is based on an active time between a QRS complex and a heart impedance signal maximum slope during the same cardiac cycle.

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